

Cinnamonhillart.com
User Manual
Programmable DigiTal Toy Counter™
(PDTC)
Rev. 4, 9/11/15

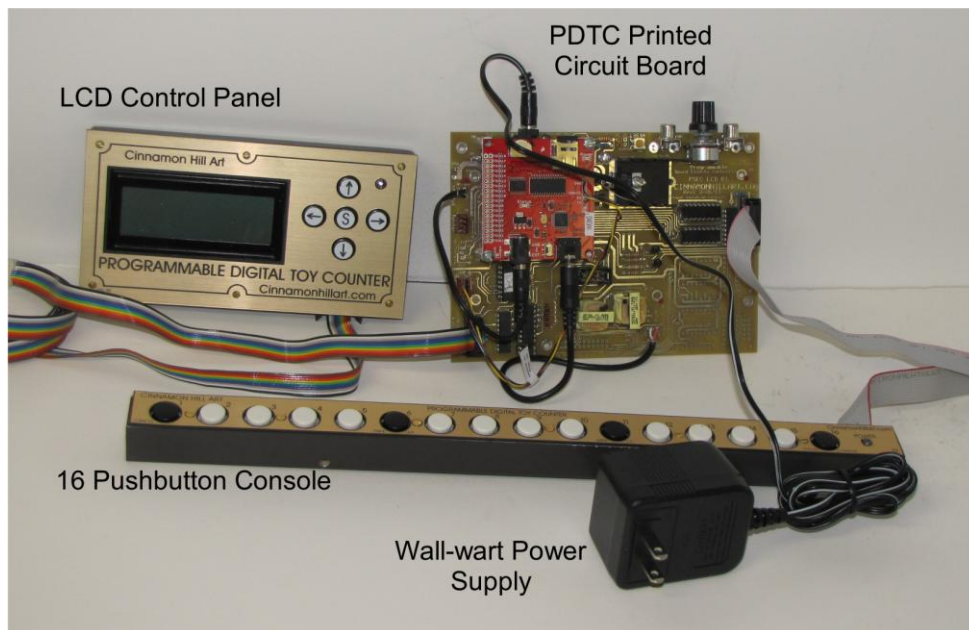


Photo #1: The 16 Pushbutton Console, Main Circuit Board, and the LCD Control Panel.

Manual Contents

Introduction:

Overall view

Section 1

Features of the Programmable DigiTal Toy Counter™

BASIC unit

ENHANCED unit

Technical Specs

Section 2

Additional Info on the Programmable DigiTal Toy Counter™ (PDTC) features

Section 3

The Liquid Crystal Control Panel

Section 4

Location of various parts inside the PDTC

SD Memory Card

Power In Jack

Stereo Outputs

Output Volume Control

J7 LCD Control Panel connector

J8 16 Pushbutton Console

J13 Remote Trigger (non-programmable) for Sound Clips #1-16.

Section 5

How to connect the Programmable DigiTal Toy Counter™

Section 6

The Pushbutton Console

Section 7

Activating the Sound Clips:

Section 8

Additional function screens:

The LCD Settings Sub-Menu

The Enhanced Functions Menu

Section 9

Programming the Cinnamon Hill Art PDTC

Section 10

Adding Remote Pushbuttons

Section 11

11a: Sound Clip Naming

11b: Working with the reserve sound clips

11 c: How to make room in the numbered list for the “Reserved Sound Clips”

Section 12

Important considerations when adding sound files

Section 13

How to remove the SD memory card

Section 14

Tricks of the trade: How to insert your own sound file

Section 15

Notes on the operation of the PDTC

Section 16

Sound Clip List

Section 17

How to add a sound clip using Audacity

Section 18

How to apply labels to pushbuttons

Section 19

Troubleshooting

Section 20

Mounting Photos

Introduction:

Overall view

The Cinnamon Hill Art Programmable DigiTal Toy Counter™ enables the user to have immediate access to up to 99 sound clips without removing the SD memory card. It consists of three units:

1) The 16 Pushbutton Console: This can be mounted anywhere the user likes on the organ console. It is very narrow (less than 1" high and 1" deep) and can be mounted in confined areas such as under the stop tablets or under the music rack.



Photo #2: The PDTC 16 Pushbutton Console

2) The Liquid Crystal Display Controller: This Controller is used to program the pushbuttons on the 16 Pushbutton Console. This unit can be mounted anywhere on the organ console (using velcro) or anywhere the user likes as long as it is accessible for any changes that the user may want to make.



Photo # 3: Close-up of the Liquid Crystal Display Programmable DigiTal Toy Counter Controller Panel. This screen is displayed for a few seconds at power on.

3) The Circuit Board (Photo #4): This is mounted inside the console or any other place where it may be hidden from view.

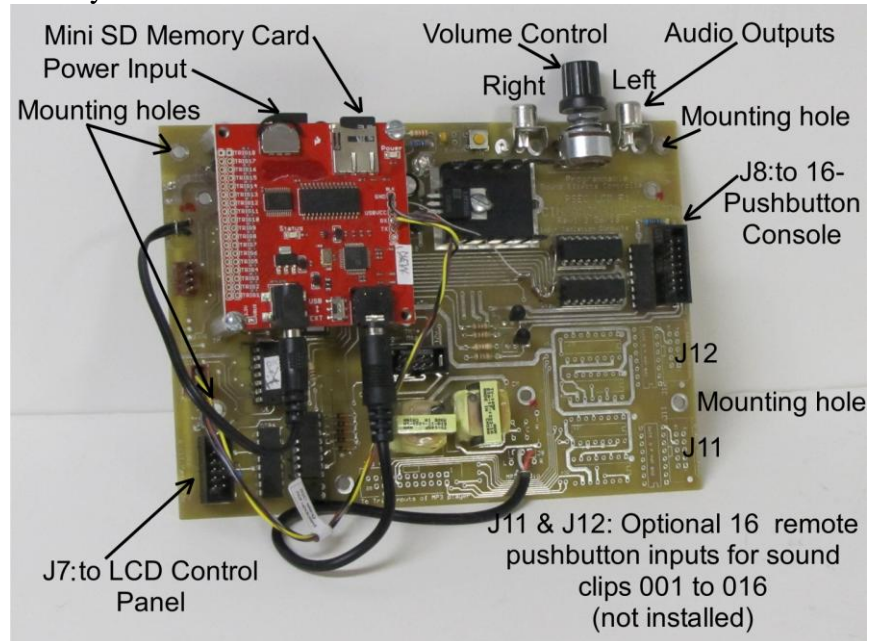


Photo #4: The PDTC printed circuit board.

Note: The user has the option to purchase the Circuit Board mounted in a plastic enclosure as shown below in Photo #5.



Photo #5: The PDTC printed circuit board mounted in an enclosure.

Section 1

Two versions of the Programmable DigiTal Toy Counter are available with several options:

Version 1: Basic Programmable* DigiTal Toy Counter

Version 2: Enhanced Programmable* DigiTal Toy Counter

Options available:

Option 1: Optional 16 additional inputs to control sound clips #1 to 16. See Section 2-6 for further explanation.

Option 2: The Main Printed Circuit Board is mounted in a small plastic enclosure measuring 8" wide x 6" deep x 3" high (see Photo #5).

*Note: **"Programmable"** means that any of the 16 pushbuttons can be assigned to any of the numbered sound clips. In addition, when programming the pushbutton, the user can assign a volume level for the sound clip being programmed. This means that each programmed sound clip will have its own volume level.

Features for the BASIC unit

1-Up to 99 numbered sound effects (sound clips) are included and can be accessed.

2-Room for 156 additional sound effects storage on the Mini SD. User can add additional sound effects taken from the internet, acoustical recordings, electronic synthesizer, or other sources. These sound effects are not numbered and are only accessed if a number is assigned to them. This is done by removing the Mini SD card and using your computer to assign a number to them. (See "Sound Clip Concepts" chart, Section 10).

3-Sixteen programmable pushbutton switches to activate the sound effect.

4-Two memory levels called "Preset #1 and Preset #2" giving a total of 32 programmable sound effects.

5-The volume level of each of the 16 pushbuttons can be individually set.

6-Optional additional inputs for remote pushbuttons for access to sound effect clips #001 to #016. See section 2-6 for information concerning the remote pushbuttons.

7-Stereo output with individual channel volume control.

8- All user-programmed data is retained even when the unit is powered down.

9-LCD Display Settings sub-menu to control brightness and contrast.

10-Ability to assign any one pushbutton to a CANCEL function.

11-LCD Display screen saver: Backlight extinguishes after about 1 minute of non-operation. Pressing any LCD Control Panel pushbutton will reactivate the backlight.

Features for the ENHANCED unit

All 11 features of the BASIC unit plus the following:

Additional sub-menu screen enabling user to activate special effects with the four black pushbuttons. These are Fadeout, Cancel, Manual Control, and Preset Change.

Technical Specifications:

Media: SDSC and SDHC micro SD card, 1GB (1000 MB)

Number of MB used for the 90+ sound clips: 10 MB

Remaining capacity: 990 MB

File System: FAT16 and FAT32

Playback: 192 kbps stereo

Section 2

Additional Information on the Programmable DigiTal Toy Counter™ (PDTC) features

1- Up to 99 stored sound effects (sound clips) can be accessed.

The Cinnamon Hill Art Programmable DigiTal Toy Counter™ comes with at least 99 sound clips. The user can access up to 99 sound clips from a memory containing up to a total of 256 sound clips. These sound clips can be as short as one second or over several minutes long. The SD Memory Card has the capacity to hold many long sound clips if required by the user.

Only the sound clips that are numbered are the ones that the DigiTal Toy Counter™ can access. The numbers run from 01 to 99. The others are held in reserve. Any one of the 16 pushbuttons can be assigned (programmed) to any one of these designated (01-99) sound clips. (See “Sound Clip Concepts” chart, Section 10).

Sound clips that do not have numbers assigned to (“**Reserve Sound Clips**”) are in the same memory area as the numbered sound clips. The user can add to this list up to 256 total sound clips. In order to use these reserved sound clips, the user must assign a number (001 to 099) to the desired sound clip with the use of a computer and a USB mini SD card reader so that it becomes part of the 99 PDTC accessible sound clips.

At the organ console, the user has full access to the 99 assigned sound clips using the Liquid Crystal Display Control Panel. (see photo #3).

2-Store up to a total of 255 sound effects.

The first 99 sound effects are programmable for Pushbutton number and volume level. The rest of the sound clips stored in Mini SD memory do not have a number but are in reserve. More information is in Section 2-1 above.

3- Individual control of volume for each sound effect

The volume level of each programmed sound clip can be individually assigned. The user can easily change the volume level of a sound clip if the first attempt was not what was expected. This is performed in the Liquid Crystal Display Control Panel. The volume level choices are from 1 (low) to 9 (max.).

4- Two memory levels are available.

These memory levels are called Preset #1 and Preset #2.

In the BASIC and ENHANCED units, the LCD Control Panel is used to change from one level to the next.

The ENHANCED version of the PDTC gives the user a choice to have pushbutton #16 on the pushbutton console be the Preset Change pushbutton if so desired. It acts similar to a lock-and-cancel button. Push and release to change preset from #1 to #2 or #2 to #1. If this function is not desired then pushbutton #16 becomes a normal sound effect pushbutton. If the user then desires to change the Preset number, it must be performed on the LCD Control Panel.

5- Four special effects (Enhanced unit – see Photo #6 below):

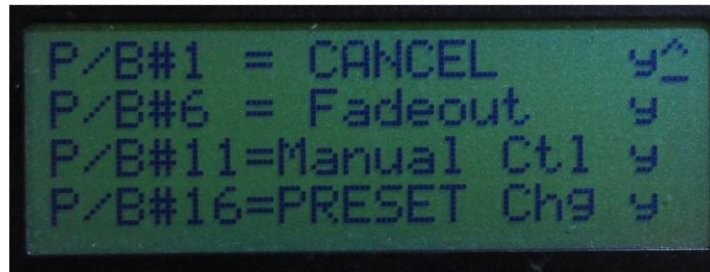


Photo #6: In the ENHANCED unit, the black pushbuttons can be assigned to special effects.

a) Cancel function (ENHANCED version)

If the user wants a fast cut-off (cancel) for some special application, then the PDTC ENHANCED version can accommodate this function. Pushbutton #1 (black cap) can be assigned to be a Cancel function. If this function is not desired then pushbutton #1 becomes a normal sound effect pushbutton.

If the user has a **Basic** version, the Cancel function can be had by simply not attaching a sound clip to #99 and using your computer to assign a pushbutton to #99.

b) Fadeout function (ENHANCED version only)

Pushbutton #6 (black cap) can be assigned to perform a Fadeout function. If this function is not desired then pushbutton #6 becomes a normal sound effect pushbutton.

Here is how it works: If the Fadeout/Cancel pushbutton is pressed as the sound clip is being played, the sound clip will fade out in volume. The fadeout time is about 6 seconds depending upon the programmed volume level.

This feature can be useful for sound clips like the Zimblestern or the clickity-clack of a train or a thunderstorm where the sound clip may be too long for the effect desired. When the fadeout function is activated, there will be no abrupt volume changes. The volume will fade slowly.

c) Manual Control Mode (ENHANCED version only)

Pushbutton #11 (black cap) can be assigned to be in Manual Control mode. If this function is not desired then pushbutton #11 becomes a normal sound effect pushbutton.

This mode allows the user to have full control over the playing length of the sound clip assigned to this pushbutton #11. The user presses the pushbutton to start a sound clip and holds the pushbutton down as long as desired to keep it playing. The sound clip will play until it ends naturally. However, if the user wants to end the sound clip prematurely, the user then releases the pushbutton. This mode is useful for certain looped sounds like a drum roll, tambourine shake, zimblestern, etc.

d) Preset Change (ENHANCED version only)

Pushbutton #16 (black cap) can be assigned to change the memory level. The user can have two memory levels or presets: Preset #1 for home use, for example, and Preset #2 for a special event use.

Pressing pushbutton #16 (if the user activates this function) will change the Preset number. For example, if the user is at Preset #1, then pressing the Preset Change pushbutton (#16) will change the preset to Preset #2. Pressing the button again will change it back to #1.

If this function is not desired then pushbutton #16 becomes a normal sound effect pushbutton. To disable this function, go to the Special Effects menu and insert a “n” on the line, “P/B#16 PRESET Chg”.

The **Basic** and **Enhanced** version users have the ability to change presets using the LCD Controller panel. Simply move the cursor into the Preset column under the Preset # 1 or 2. Then use the UP or DOWN arrows to change the Preset number.

For any of these above functions, the user decides which one will be active by simply activating or deactivating this function (this is explained in Section 8, The Enhanced Function Menu). If the function is deactivated, then the black cap pushbuttons become a sound clip activation pushbutton just like the whitecap pushbuttons.

6- Optional 16 additional inputs to control sound clips #1 to 16

In addition, an option is available where the user has an additional 16 **non**-programmable inputs. These inputs are wired to remote pushbuttons for accessing only sound clip numbers 001 to 016*. These can be your frequently used special effects. All inputs are electronically isolated to allow wire lengths of over ten feet without affecting the operation of the unit. With user supplied remote pushbuttons at J11 (sound Clip #1-8) and at J12 (sound clip #9-16), the sound clips can be remotely actuated. Additional instructions on the wiring of these pushbuttons are in Section 10.

***Note:** Notice that 001 – 016 are **not** pushbuttons #1 – 16. They are the sound effect clips numbered in the Mini SD memory card. Therefore, the 16 remote pushbuttons can give the user an ADDITIONAL 16 pushbutton sound effects if desired. The astute reader will begin to calculate the total number of sound effects available if this option is purchased. Yes, it adds up to 48 available pushbutton-controlled sound effects!

7- Stereo output (RCA jacks) with volume control:

The outputs of the PDTC are stereo line level, RCA jacks. A single master volume control at the rear of the printed circuit board controls both channel volume levels. Remember, the sound effects assigned to each pushbutton also have their own volume level assigned to each pushbutton.

8- A Sound effects library is included on the SD card with over 90 sounds.

At the end of this manual is a list of sound effects included with the purchase of the PDTC. Each of the sound clips has a number from 001 to 099.

The user may, if desired, add additional sound clips to library on the SD card using a Computer (see Section 6, The Pushbutton Console, and 7, Activating the Sound Clips).

Section 3

The Liquid Crystal Control Panel (see Photo #7)

The five pushbuttons on the LCD Control program the sound clips. The underline cursor shows the user where and what is to be programmed.



Photo #7: The pushbuttons on the LCD Control Panel

The pushbuttons are labeled as follows: LEFT arrow, RIGHT arrow, UP arrow, DOWN arrow, and 'S' for STORE.



Photo #8: After power is applied, this screen will appear for a few seconds.

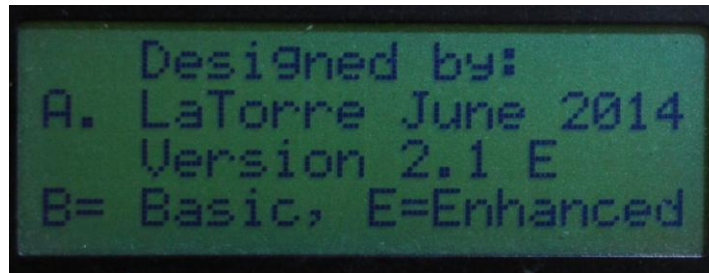


Photo #9: This information screen will appear for a few seconds.

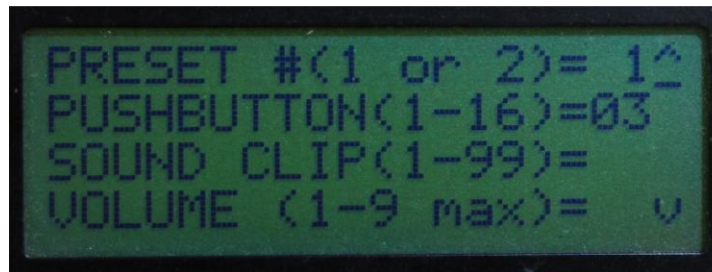


Photo #10: This is the third screen called the Main Menu. After a delay of about 6 seconds, the blue pilot light (upper right) will light up indicating that the unit is ready to operate.

Note: There are two levels for the blue pilot light. Dim for Preset #1 and bright for Preset #2.

In order to conserve power, the LCD backlight will extinguish after one minute of non-use. At the push of any of the five buttons, the backlight will activate and then the user may proceed.

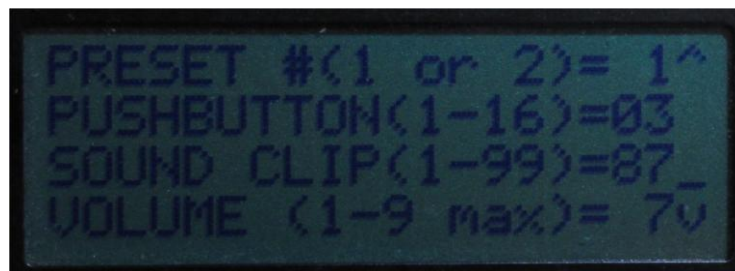


Photo #11: The backlight extinguishes after 1 minute. Press any button to activate backlight. Once the backlight is activated, then the pushbuttons become active also.

Section 4

Location of various parts inside the PDTC (Refer to Photo #5)

SD Memory Card: 1 GB. Push in to release (loosen screw to move safety clip out of the way). This is a very delicate SD connector and must be handled with care. It is not replaceable. The safety clip keeps the SD card from flying out and getting lost.

Power In Jack: 12v, 200mA, linear wall adapter supply. Connector: female, center positive, 2.1mm ID x 5.5mm OD.

Stereo Outputs: RCA type, left and right.

Output Volume Control: The left and right channels are controlled simultaneously using the single volume control at the RCA jack outputs.

J7: The 10-conductor ribbon cable for the Liquid Crystal Display Control Panel connects here.

J8: The 14-conductor ribbon cable for the Pushbutton Console connects here.

J13: This is an option allowing the user to have 16 remote pushbutton inputs for sound clips 001 to 016 (non-programmable). It uses connectors J11 and J12 as the input switching for these sound clips. These connectors and associated parts will be missing from units ordered without the option.

If the user ordered this option then the remote pushbuttons (supplied by the user) are wired to these inputs. They are not programmable. In other words, the first remote pushbutton will control sound clip #001, the second will control sound clip #002, etc. up to sound clip #016. The volume level will be the level recorded on the sound clip.

Sound clips 001 to 016 can be useful for sound effects that are frequently used and do not have to be programmed for volume level, etc. These can be your favorite sound clips. The resulting volume level will be the volume level of the sound clip stored in the SD memory. It is not adjustable.

Section 5

How to connect the Programmable DigiTal Toy Counter™

Note: Be sure your amplifier is switched OFF or at minimum volume.

1- Connect the stereo amplifier input cables to the RCA jacks at the rear of the PDTC printed circuit board. Be sure your amplifier is **switched off**.

2- Plug the “wall-wart” power supply into a 120-volt outlet.

3- Insert the “wall-wart” power supply connector into the Power In jack located at the rear of the Controller.

4- Do not push any buttons until the blue LED lights. The time delay of about 12 seconds is due to the electronics having to “warm up”. It takes that amount of time for the processor to catalog and check all 99 of the sound clips, which are loaded in the memory.

6- Press one of the 16 pushbuttons on the console panel to listen to the sound clips, which were previously loaded by Cinnamon Hill Art..

7- Now you can experiment and change the sound clips assigned to the pushbuttons. See Section 9 on programming the PDTC.

Section 6

The Pushbutton Console

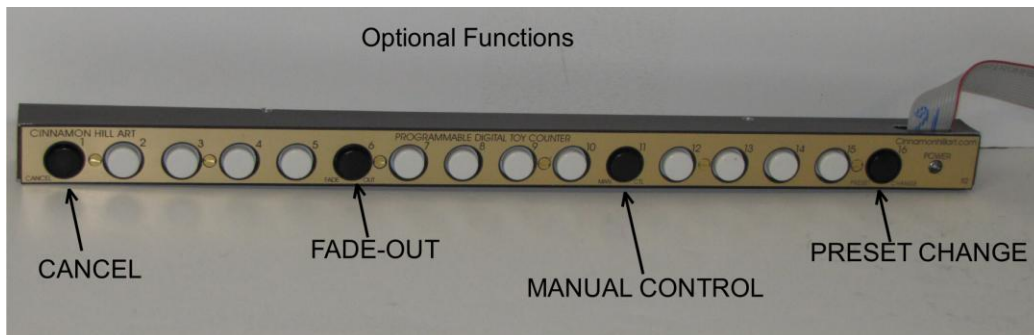


Photo #12: The 16 Pushbutton Console

There are 16 pushbuttons on the console. Four of them have black caps. In the BASIC version of the PDTC, these pushbuttons will activate a sound clip just like the white cap pushbuttons. They have no special function other than giving the user a benchmark so that a sound effect can be quickly found during performance.

In the ENHANCED version, these black capped pushbuttons activate sound clips just like the white pushbuttons OR they can be used to activate certain functions. These functions are as follows:

Pushbutton #1: CANCEL

Pushbutton #6: Fadeout

Pushbutton #11: Manual Control

Pushbutton #16: PRESET change

These functions are explained in Section 2-5.

The user selects whether or not these functions are active by going to the ENHANCED Functions Menu and activating or deactivating the function (See Section 8, The Enhanced Function Menu and Photo #18).

Mounting hints: There are 2 through holes for mounting the Pushbutton Console to the underside of a music rack. Velcro is also supplied for mounting to a vertical surface.

Section 7

Activating the Sound Clips:

Any of the 99 available sound clips on the SD memory card can be assigned to any of the 16 pushbuttons. Along with assigning the sound clip the pushbutton number, the user also assigns a volume level (1 to 9 maximum) to that individual sound clip.

Section 8

Additional function screens:

The LCD Settings Sub-Menus

The LCD Settings Menu is available in the BASIC and ENHANCED units (Photo #13).

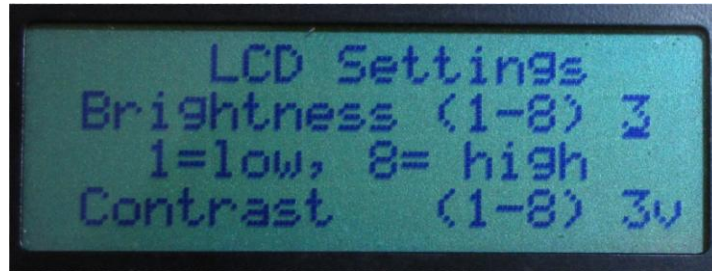


Photo #13: The LCD Settings menu

How to get to the LCD Settings Sub-Menu:

In the Main Menu, notice the up arrow ('^') at the extreme right side of the PRESET line in the Travel Track (Photo #19).

UP ('^') arrow to LCD Settings Menu

DOWN ('v') arrow to Enhanced Function

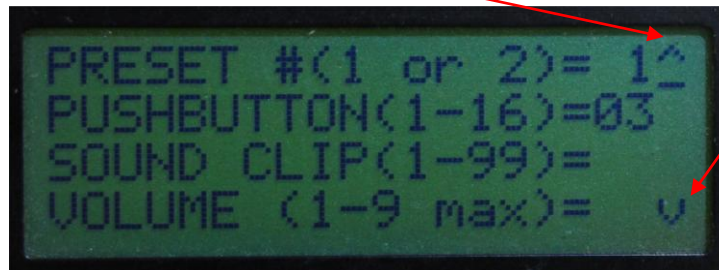


Photo #14: The Main Menu showing UP ("^") and DOWN ("v") arrows.

This symbol indicates that there is a sub-menu screen available (ENHANCED users will also notice a down arrow ('v') at the bottom right of the screen which accesses the Enhanced Functions sub-menu).

To get to the LCD Settings sub-menu, just position the cursor at the extreme right top side in the Travel Track and press the UP arrow. This is the LCD Settings Sub-Menu.

The user can set the brightness level and contrast using this sub-menu. The method used is the same as the Main Menu. Increasing the Brightness number increases the brightness. Increasing the Contrast number increases the contrast. Normal settings are '2' or '3' for Brightness and '3' for contrast.

To return to the Main Menu just position the cursor at the bottom right of the screen in the Travel Track, under the 'v', and press the DOWN arrow.

The Enhanced Functions Menu

This sub-menu is only available for those users who ordered the ENHANCED version. While in the Main Menu*, bring the cursor down to the bottom right of the screen under the 'v'. Press the DOWN pushbutton to activate the sub-menu. BASIC users will not have the 'v' showing.

*Note: If the PDTC is in Preset #1, the Enhanced Functions will relate to Preset #1 pushbuttons. If the PDTC is in Preset #2, the Enhanced Functions will relate to Preset #2 pushbuttons.

Just before the Enhanced Functions Sub-Menu is displayed, an instruction screen will appear. It will read:

Enhanced Functions

Select

y (yes) to activate, n (no) to deactivate

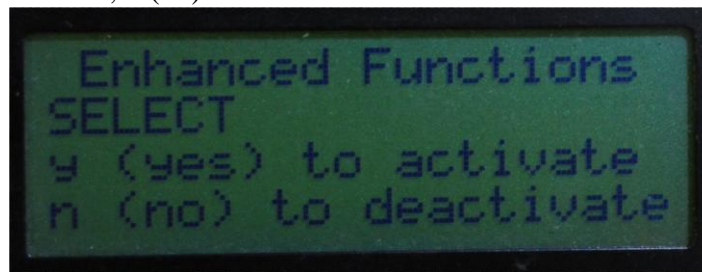


Photo #15: Enhanced Functions menu instruction screen

After a few seconds, the Enhanced Functions Sub-Menu will appear:

P/B#1 = CANCEL y^

P/B#6 = Fadeout y

P/B#11=Manual Control y

P/B#16 =PRESET Chg y

The '^' in the Travel Track indicates to the user how to return to the Main Menu. In the example below (Photo #16), all of the black capped pushbuttons will perform the enhanced functions.

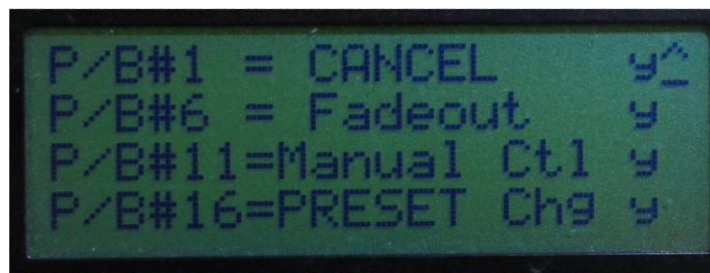


Photo #16: Enhanced Functions sub-menu

If the user would like pushbutton #1 to act as a Sound Clip button, then just set the "y" to a "n" by moving the cursor under the "y" and pressing the UP or DOWN pushbutton to change the letter. Pushbutton #1 will become the normally operated sound clip-activation pushbutton.

Note: The 16 pushbuttons on the Pushbutton Console will not be active whenever the unit is in a sub-menu.

Section 9

Programming the Cinnamon Hill Art Programmable DigiTal Toy Counter™

Programming Steps:

1-The SD sound card: The PDTC comes supplied with many sound clips stored on a 1 GB mini SD card. There is more than enough room on the SD card to contain the sound clips. Refer to the enclosed sound clip list at the end of this manual for the sound clip names and numbers.

Note: During the process of programming, the user should have a list of the numbered sound files available.

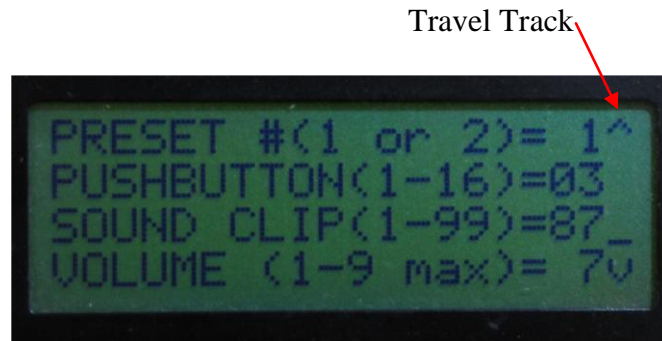


Photo #17: The programming section of the Programmable Sound Effects Controller.
The Travel Track is shown.

2-How to program a pushbutton to actuate a selected sound clip on the LCD Control Panel (BASIC and ENHANCED units):

Note: In order to move up a level or down a level, the cursor must be in the extreme right side of the display called the Travel Track (See Photo #17). The UP and DOWN arrows will control the movement of the cursor. These arrows, when the cursor is in the Travel Track, do not change any of the numerical values.

Here is how to program pushbutton #9 to sound clip #41 at a volume of 8 in memory Preset #1.

With the cursor in the Travel Track,

- Move the cursor to the "PRESET" line.
- Move the cursor left so that is under the preset number.
- Press the UP or DOWN arrow to select the preset number desired, 1.
- After selecting the preset number, the cursor automatically moves into the Travel Track. When in the Travel Track, the cursor can be moved DOWN to the next

line, if desired. If the cursor is moved UP, then a sub-menu will appear for the LCD Settings (see Section 8).

- e) Move the cursor DOWN to line 2, the "PUSHBUTTON" number line.
- f) Move the cursor to the LEFT until it is in the "tens" position of the "PUSHBUTTON" number.
- g) Press the UP or DOWN pushbuttons until "0" is reached (we want to set pushbutton number 09).
- h) Now move the cursor to the RIGHT to the "units" position and use the UP or DOWN buttons until "9" is reached.
- i) Move the cursor LEFT to the Travel Track.
- j) Move the cursor DOWN.

You will notice that the Sound Clip number and Volume Level appear for that pushbutton. The data shown comes from memory. This is the data presently programmed for this pushbutton.

k) Change the Sound Clip number to 41 then move the cursor into the Travel Track and go DOWN to the Volume line and change the Volume Level to 8.

l) It is now time to store the data in memory. Press the "S" key. The data is now stored in permanent memory.

If, after you pressed pushbutton #9 on the Pushbutton Console and the sound clip is not at the volume level desired, go to the VOLUME line on the display and change the volume level and then press STORE again. This enables the 16 pushbuttons to be programmed.

Section 10

Adding Remote Pushbuttons

If you ordered the 16 remote pushbutton option:

- 1- Plug in the ribbon cable connector into either J11 (for sound clips assigned to pushbuttons #1 to 8) or J12 (for sound clips assigned to pushbuttons #9-16)
- 2- Connect the pigtail end of the cable to your remote pushbuttons according to the wiring diagram under Photo #4 (a larger version is at the end of the manual).

Note: The user must supply pushbuttons for remote operation.

J11 Remote Pushbuttons #1-8 Connector

J12 Remote Pushbuttons #9-16 Connector

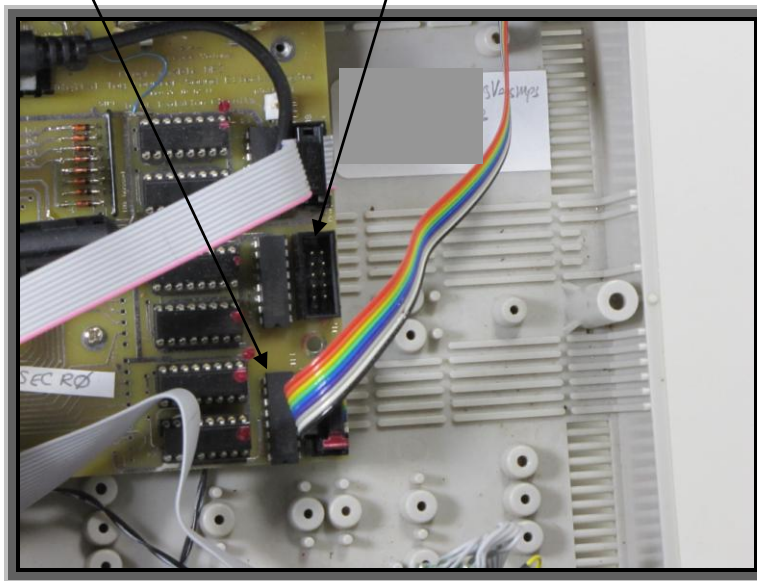
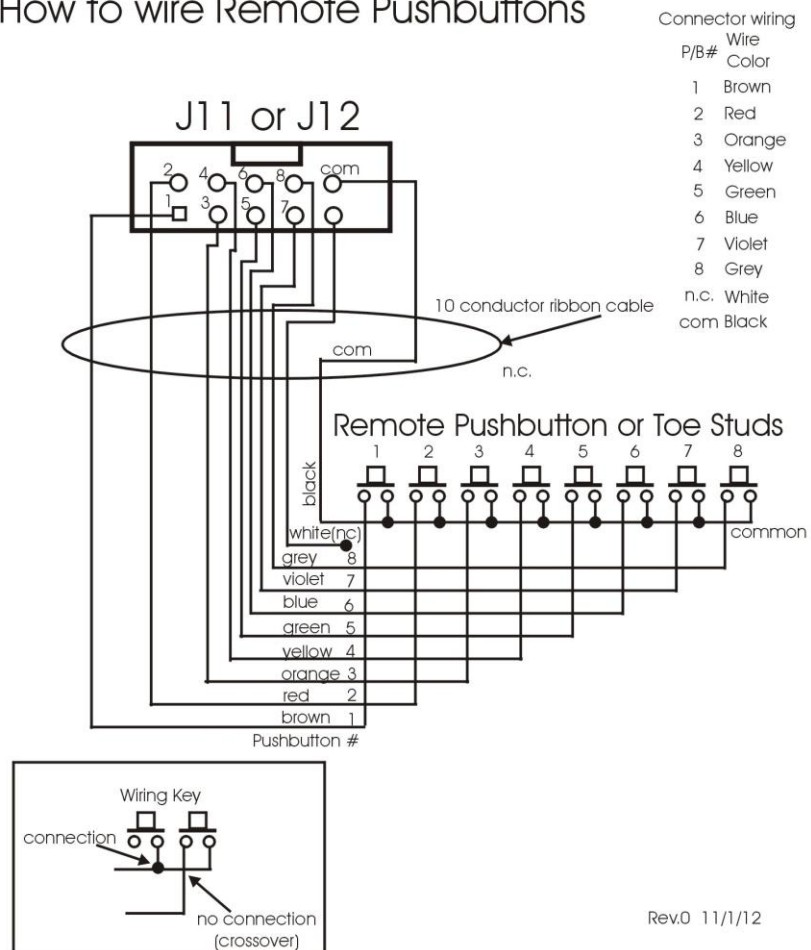


Photo #18: Connecting the Remote Pushbuttons

Cinnamon Hill Art Programmable Sound Effects Controller

How to wire Remote Pushbuttons



Rev.0 11/1/12

Sound Clip Concepts

Cinnamon Hill Art
Programmable Sound Effects Engine

Front Panel Pushbuttons



Pushbuttons are
Programmable for
Sound Clip #
and
Volume

Any of the numbered sound clips can
be assigned to any of the pushbuttons.

PSEE Sound Clips R0

- 01 AC 100 inch Blower
- 02 Acme Siren
- 03 Ahooga Horn short
- 04 Ahooga
- 05 Applause 21sec
- 06 Applause short
- 07 Barge Horn
- 08 Bass Drum1
- 09 Screaming Woman
- 10 Bell Glissando long2
- 11 Bell Glissando Short
- 12 Bicycle Bell
- 13 Bicycle Horn
- 14 Bird singing
- 15 Birds
- 16 Boing1
- 17 Boing2
- 18 BottleBlow
- 19 Bubbles 7 sec
- 20 Bubbles 22 sec
- 21 Bugle Charge1
- 22 Bugle Charge 2
- 23 Bundt Bell aluminum
- 24 Car Horn
- 25 Church Chimes down
- 26 Coffee Perk
- 27 CowMoo
- 28 Crash Cymbal Roll 1
- 29 Curly Joe
- 30 Cymbal Crash Roll 2
- 31 Cymbal Crash
- 32 Cymbal Hit
- 33 Cymbal Roll and Hit
- 34 Driveby and Crash
- 35 Factory Whistle
- 36 Fanfare
- 37 Fart
- 38 Fire Bell
- 39 Fog Horn1
- 40 Fog Horn2
- 41 Fog Horn3Low
- 42 Fog Horn4Low
- 43 Footsteps
- 44 Glass Bell
- 45 Gong1
- 46 Gong BIG 12 sec
- 47 Gong Roll
- 48 Gong 2
- 49 Harp Glissando Up Dn
- 50 Horse Whinny
- 51 Klaxon Horn1
- 52 Laughing Man
- 53 Lion Roar

OPTIONAL User-supplied pushbuttons

- | | |
|---|---|
| ① | ⑨ |
| ② | ⑩ |
| ③ | ⑪ |
| ④ | ⑫ |
| ⑤ | ⑬ |
| ⑥ | ⑭ |
| ⑦ | ⑮ |
| ⑧ | ⑯ |

Pushbutton #1 plays sound clip
#01 at full volume. No
programming is possible.
Pushbutton #2, plays sound clip
#02, etc.

Section 11

11 a: Sound Clip Naming

Note: Before working with the sound clips it is strongly suggested that you copy the entire SD memory card to a back-up folder on your computer.

The supplied SD card holds the 99 numbered MP3 sound clips. These sound clips can be of any reasonable length of time (ie:Zimbelstern sound clip is over 1 minute long). Some sound clips can be as short as one second.

From these 99 numbered sound clips, the user selects which ones will be assigned to the 16 lever switches on the front panel. This is called, “programming”.

The sound clips need to be named as shown below:

001 CrashCymbal.mp3
002 Thunder.mp3
003Dog Bark.mp3

Notice that there are always three digits for the sound clip number.

Leading zeros are required. For example: Sound clip #4 must be labeled as “004”.

The sound clip number must always come first before the name of the sound.

A space after the sound clip number is optional.

The “.mp3” is necessary.

Here is another way to name sound clips:

001.mp3
002.mp3
003.mp3

Naming a sound clip like this will work fine but may cause some confusion since it is non-descriptive.

The list must be contiguous with no missing numbers up to the last sound clip number used. For example: if you only have 20 sound clips available, then the first sound clip will be “001” and the last sound clip number will be “020”.

The PDTC can control up to 99 sound clips. The last sound clip will be numbered as “099” if there are 99 sound clips in the memory card.

For example: there may only be, let us say, 20 sound clips available, as in the above example. This is fine. However, do not have any missing sound clip numbers as in the example below:

001 CrashCymbal.mp3
002 Thunder.mp3
004 Dog Bark.mp3
005.mp3
006.mp3

Note that we are missing sound clip # 003.

A list of the included sound clips is supplied by Cinnamon Hill Art. See an example at the end of this manual.

11b: Working with the “Reserved Sound Clips”

Here is an example of a sound file list with numbered and unnumbered sound clips. The unnumbered clips are for future use by the user. These are called, “Reserved Sound Clips”.

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
Factory Whistle.mp3
AirRaidSiren.mp3
Zymbelstern.mp3
WoodyWoodpecker.mp3

The SD memory card allows the user to load a maximum of 256 sound clips with the “Reserved Sound Clips” included in that number. The “Reserved Sound Clips” are the sound clips that are NOT numbered. Therefore, the PDTC does not recognize them nor does it play them.

The only ones that the PDTC will control are the numbered sound clips from 001 to 099. It will ignore the unnumbered sound clips. To activate any of the unnumbered sound clips, the user must remove the SD card, plug it into a USB mini SD reader (if your computer does not have a mini SD reader), and then plug it into a computer.

Using your computer, open the sound clip file. The un-numbered sound clips are given a number. They are now available to the user by the PDTC. The user must be careful that there are no duplicate sound clip numbers.

Here is an example of adding the Zimbelstern to the list:

The original list:

001 CrashCymbal.mp3
002 Thunder.mp3
003 AcmeSiren.mp3
004 Dog Bark.mp3
005 TaDaah.mp3
006 Boing.mp3
007 SteamWhistle.mp3
008 Horn.mp3
009 Birds.mp3

Numbered Sound Clips

AirRaidSiren.mp3
FactoryWhistle.mp3
WoodyWoodpecker.mp3
Zymbelstern.mp3

Un-numbered “Sound Clips in Reserve”

Assign a number to the Zimbelstern and remove the 009 from the “Birds.mp3”

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- 004 Dog Bark.mp3
- 005 TaDaah.mp3
- 006 Boing.mp3
- 007 SteamWhistle.mp3
- 008 Horn.mp3
- Birds.mp3
- AirRaidSiren.mp3
- FactoryWhistle.mp3
- WoodyWoodpecker.mp3
- 009 Zymbelstern.mp3**

Exiting the file and then re-entering by clicking on the file gives this list:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- 004 Dog Bark.mp3
- 005 TaDaah.mp3
- 006 Boing.mp3
- 007 SteamWhistle
- 008 Horn.mp3
- 009 Zymbelstern.mp3
- AirRaidSiren.mp3
- Birds.mp3
- FactoryWhistle.mp3
- WoodyWoodpecker.mp3

Notice that the numbers are listed in numerical order. Your computer will automatically perform this operation when you re-open the file.

Also, notice that there are no missing numbers in the list.

There is an error in the above list. Can you find it?

Answer:

During the process of moving the Zimbelstern, the Steam Whistle, 007, lost the “.mp3”.

11 c: How to make room in the numbered list for the “Reserved Sound Clips”

Note: Before working with the sound clips it is strongly suggested that you copy the entire SD memory card to a back-up folder on your computer.

If your SD card contains 99 numbered sound clips and several un-numbered “Reserved Sound Clips”, and you want to add some of the “Reserved Sound Clips” to the numbered sound clips, you will have to make room in the numbered sound clips list. Here is how this is done:

This is a list of 99 sound clips plus 3 un-numbered “Reserved Sound Clips”:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- 004 Dog Bark.mp3
- 005 TaDaah.mp3
- 006 Boing.mp3
- 007 SteamWhistle.mp3
- 008 Horn.mp3
- { the remaining sound clips, 009 to 098, are not shown to save page space }
-
-
- 099 Zymbelstern.mp3
- AirRaidSiren.mp3
- FactoryWhistle.mp3
- WoodyWoodpecker.mp3

All of the numbered slots are taken. If you want to add the Air Raid Siren, Factory Whistle, and Woody Woodpecker sound clips, you must make room for these in the numbered list.

So, decide upon which sound clips you can do without. Let us assume you do not want the Dog Bark, the TaDaah, and the Boing.

Let us start with removing the Dog Bark, #004:

Step #1: Remove the number, 004, in front of the DogBark.mp3 sound clip:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- Dog Bark.mp3**
- 005 TaDaah.mp3
- 006 Boing.mp3
- 007 SteamWhistle.mp3
- 008 Horn.mp3
-
-
-
- 099 Zymbelstern.mp3
- AirRaidSiren.mp3
- FactoryWhistle.mp3
- WoodyWoodpecker.mp3

Step #2: Transfer that number, 004, to one of the new sound clips, AirRaidSiren.mp3:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- Dog Bark.mp3
- 005 TaDaah.mp3
- 006 Boing.mp3
- 007 SteamWhistle.mp3
- 008 Horn.mp3
-
-
-
- 099 Zymbelstern.mp3
- 004 AirRaidSiren.mp3**
- FactoryWhistle.mp3
- WoodyWoodpecker.mp3

Step #3: Remove the 005, and 006 from the remaining sound clips, TaDaah, and Boing. Assign numbers 005 to the FactoryWhistle and 006 to WoodyWoodpecker:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- Dog Bark.mp3**
- TaDaah.mp3**
- Boing.mp3**
- 007 SteamWhistle.mp3
- 008 Horn.mp3
-
-
-
- 099 Zymbelstern.mp3
- 004 AirRaidSiren.mp3**
- 005 FactoryWhistle.mp3**
- 006 WoodyWoodpecker.mp3**

Step #4: Now, when you exit the file and then click on it again, the list will be put in numerical and alphabetical order by your computer:

- 001 CrashCymbal.mp3
- 002 Thunder.mp3
- 003 AcmeSiren.mp3
- 004 AirRaidSiren.mp3**
- 005 FactoryWhistle.mp3**
- 006 WoodyWoodpecker.mp3**
- 007 SteamWhistle.mp3
- 008 Horn.mp3
-
-
-
- 099 Zymbelstern.mp3
- Boing.mp3**
- Dog Bark.mp3**
- TaDaah.mp3**

Notice that the Boing, Dog Bark, and TaDaah are now in alphabetical order.

Section 12

Important considerations when adding sound files using your computer:

- 1- A three-digit number is required so a leading zero is necessary. (Example: 001 to 099).
- 2- If you add a sound clip make sure it is a mp3 file (be sure the “.mp3” is at the end of the file).
- 3- It is advisable to add about .5 to 1.0 seconds to the end of your new sound clip to prevent “clipping” of the sound when the PDTC plays it. This can be done in a program such as Audacity (free, it can be found on the internet at: <http://audacity.sourceforge.net/>).
- 4- Do not have two different sound clips with the same number. Before transferring the sound clips to the flash memory, check to see that the numbers are sequential. To make the numbers sequential, just back out of the folder once and then go back into it. Your computer will automatically organize the sound files’ number sequentially and the rest of the files without numbers will be organized alphabetically.
- 5- Make a **backup copy** of the SD memory contents before you do anything to it and place it in a folder in your computer or on a jump drive.
- 6- **When power is applied to the Programmable DigiTal Toy Counter, the unit will scan all the sound files and get them ready to play. With over 90 stored sound clips, this takes about 10 seconds. If you add more sound clips then it will take longer for the PDTC to “warm up”.**

Section 13

How to remove the SD memory card:

If you desire to add or to reorganize the sound files that are activated by the pushbuttons, you must remove the SD card from the red printed circuit board.

Note: Before removing or inserting the SD memory card do the following:

- 1-Shut off any power to the Programmable Digital Toy Counter.**
- 2-Ground yourself by momentarily touching the mounting screw holding the outlet plate on your 120 volt outlet in order to discharge any static electricity.**
- 3-Avoid wearing a wool or poly sweater when working with the SD memory card.**

Steps in removing the SD memory card:

- a) Loosen the circuit board mounting screw that is holding the metal clip. The purpose of the clip is to prevent the tiny SD memory card from popping out of its holder and getting lost.
- b) Move the clip out of the way.
- c) With your finger, press the card in slightly and then letting it release from the holder.

Replacing the SD memory card;

- a) Hold the card with gold contacts down and insert into the holder until a click is felt.
- b) Remove your finger from the card. It should remain in place.
- c) Swing the clip against the card and tighten the mounting screw.

Section 14

Tricks of the trade:

How to add your own sound files to the SD memory card:

The internet is full of sound clips that you might want to use. When you find one you like, do the following:

1-Open Audacity (Audacity is a very fine free software for doing audio editing) (<http://audacity.sourceforge.net/>).

2-Press the RECORD button in Audacity.

3-Play the sound clip while Audacity records it.

Now that you have the sound clip recorded in Audacity you can make adjustments such as:

1- Eliminating the silence at the beginning of the sound clip in order to have the clip begin without delay.

2-Adjust the volume level by highlighting the sound clip and “amplifying” until the waveform almost touches the top or bottom limits.

3-Use the Audacity “fade-out” or “fade-in” function if necessary at the beginning or end of the sound clip.

4-Add about 1 second of silence to the end of the sound clip especially if it has no fade-out and is a sound that ends abruptly such as a drum.

5-Save the sound clip in an Audacity sound clip folder so that you will be able to tweak it again if necessary.

6-Save it also as a “wav” file so you can convert it to a mp3 (Audacity does NOT save as a mp3 – at least in the version that I have).

7-Convert it to a .mp3 file using a program called Daniusoft. You can find this free software at www.daniusoft.com

8-After the conversion, double click on the file and listen to it. Check for startup time, distortion, and premature cutoff.

a- If it takes a moment for the sound file to start up then you need to cut out the silence at the beginning of the sound file. NOTE: Whenever one converts to MP3, a .025 second of silence must be added to the beginning of the sound file. This can cause a short delay before the sound begins. From my experience, there is always a short delay before the sound begins. If you find a way to eliminate it then please let me know how to do it.

b-If you have distortion then you might have amplified the sound too much. To fix this, you must go back to the source of the sound file and record it again, this time being careful that you do not exceed the recording limits.

c- Whatever sound clip you use, you will find that the PDTC cuts off about ½ second of the sound clip. This is inherent in the design of the MP3 player. Therefore, the solution is to add about ½ to 1 second of silence to your sound clip to eliminate this problem. This is particularly noticeable with sounds that end abruptly like the Klaxon Horn, etc. Sounds that fade out like the Chime usually do not give this problem.

Note: See Section 17, “How to add a sound clip using Audacity”, for additional information.

Section 15

Notes on the operation of the PDTC:

1-Always have your amplifier either off or at minimum volume when plugging in or unplugging the audio cables.

2-If you hear no sound after pressing a pushbutton, check the following:

1- Does the sound clip name have the .mp3 at the end of its name?

2- Did you program a suitable volume level when you pressed the STORE?

NOTE: Cinnamon Hill Art reserves the right to change design or function in order to improve this product. This includes the addition or removal of sound files to the library and the initial arrangement and selection of the numbered sound files.

Section 16

Example of a Typical Sound Clip List (Yours may be slightly different)

PDTC Sound Clips R0		49	Harp Glissando Up Dn
		50	Horse Whinny
		51	Klaxon Horn1
01	AC 100 inch Blower	52	Laughing Man
02	Acme Siren	53	Lion Roar
03	Ahooga Horn short	54	Long Gong1
04	Ahooga	55	Mallet Cymbal
05	Applause 21sec	56	Old Car Bulb Horn
06	Applause short	57	Open Triangle 1
07	Barge Horn	58	Open Triangle 2
08	Bass Drum1	59	Party Noisemaker
09	Screaming Woman	60	Police Whistle
10	Bell Glissando long2	61	RainWindThunder 33 sec
11	Bell Glissando Short	62	Rooster Crow
12	Bicycle Bell	63	Schoolbell
13	Bicycle Horn	64	Short Gong1
14	Bird singing	65	SkiddyDo
15	Birds	66	SleighBellsShake
16	Boing1	67	Sleigh JingleBells (entire song)
17	Boing2	68	Slide Whistle DOWN UP
18	BottleBlow	69	Small Train Whistle
19	Bubbles 7 sec	70	Snare Drum Hit
20	Bubbles 22 sec	71	Snare Drum Roll 1
21	Bugle Charge1	72	Snare Drum Roll 2
22	Bugle Charge 2	73	Steam Train and Whistle 7 sec
23	Bundt Bell aluminum	74	Strong Cymbal
24	Car Horn	75	Tambourine Hit
25	Church Chimes down	76	Tambourine Shake
26	Coffee Perk	77	Telephone Bell old
27	CowMoo	78	Thunder 1
28	Crash Cymbal Roll 1	79	Thunder 2
29	Curly Joe	80	Thunderbolt
30	Cymbal Crash Roll 2	81	Train Bell 1x
31	Cymbal Crash	82	Train Bell 4x
32	Cymbal Hit	83	Train Whistle 1
33	Cymbal Roll and Hit	84	Train Whistle 2 Aluminum
34	Driveby and Crash	85	Triangle Dinner Call
35	Factory Whistle	86	Tubular Chime Large "C"
36	Fanfare	87	Tubular Chime Small "C"
37	Fart	88	Up Scale Whistle
38	Fire Bell	89	Wind 5 sec
39	Fog Horn1	90	Wind 6 sec
40	Fog Horn2	91	Wind 20 sec
41	Fog Horn3Low	92	Wolf Call Whistle
42	Fog Horn4Low	93	Wolf Whistle
43	Footsteps	94	Zimbelstern 1min 30 seconds
44	Glass Bell	95	Zimbelstern 15 sec.
45	Gong1	96	Hey Stella
46	Gong BIG 12 sec	97	That's All Folks
47	Gong Roll	98	WoodyWoodpecker
48	Gong 2	99	Frankly My Dear

Section 17

How to add a sound clip using Audacity

Software needed: Audacity Digital Audio Editor (1.2.6). Download it free at <http://audacity.sourceforge.net/>

You will also need Daniusoft MP3 WAV Converter. You can find this free software at www.daniusoft.com

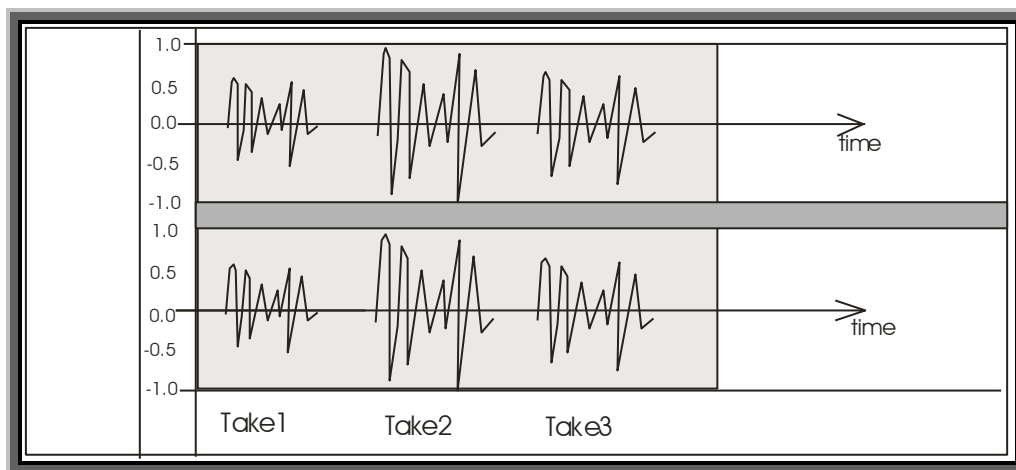
Recording device: Digital recorder with microphone

Acoustical sound device such as a drum, klaxon horn, etc.

Note: Audacity can also be setup to record from your sound card. This means that any sound that you can hear on your computer speakers can be sent to Audacity for editing. The procedure to do this will be apparent as you get experience using Audacity.

Steps:

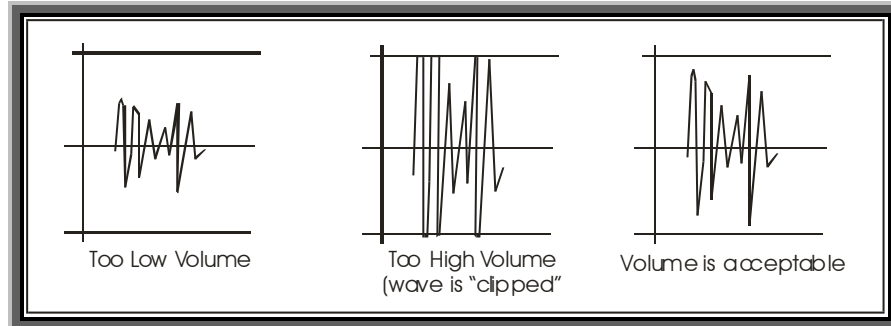
- 1- Use a digital recorder to record the sound you want. It would be best to record several variations of the sound on the same file.
- 2- Connect your digital recorder to your computer and set it up to download the audio file (in WAV format most likely) from your digital recorder to your computer..
- 3- Place the sound clip in a new folder on your computer and label it according to the sound it produced.
- 4- Start Audacity. Go to the FILE menu and then OPEN the sound clip.
- 5- Audacity will look approximately like this:



These are the raw sound clips. They will need some work such as removing unwanted clips, increasing or decreasing the volume, removing the silence at the beginning of the clip, adding silence to the end of the clip, converting clip to MP3, etc.

Changing the Volume of an Audacity sound clip:

- a) It has been my experience that the sound clip should be about $\frac{3}{4}$ of the way up from the zero line for best results. Here are some examples of too soft, too high, and acceptable volume levels.



To increase the volume:

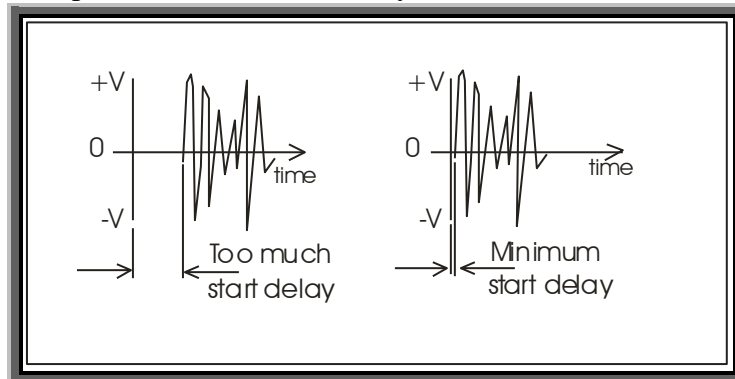
Select the sound clip, go to EFFECT menu, then AMPLIFY, and click on OK.

To decrease the volume:

Select the sound clip, go to EFFECT menu, set a "--" number, then click OK. If it does not reduce it enough then go to EDIT menu and UNDO, are repeat the above with a larger "--" number.

Reducing the startup delay:

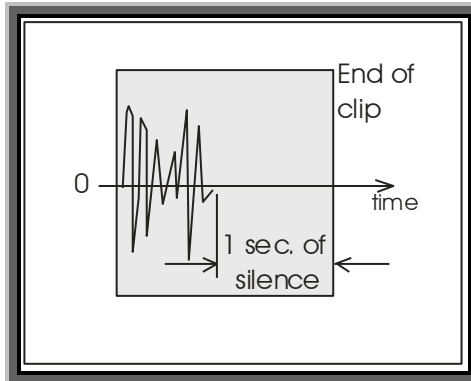
- b) The sound clip should start immediately:



Highlight the start delay and then CUT.

Prevent the sound clip from ending too abruptly during playback:

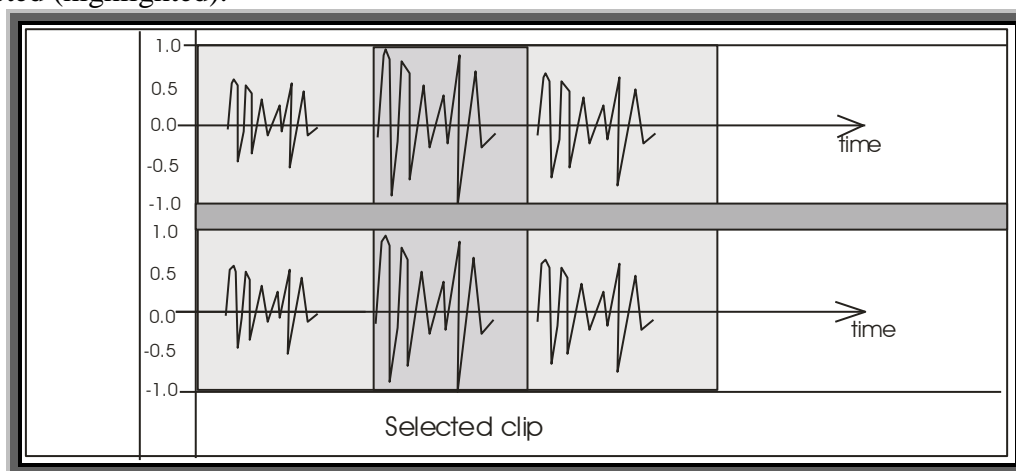
- c) Add at least 1 second of silence after the sound track ends:



Click on the end of the sound clip. Go menu item, Generate, then “Silence”, pop up appears for you to insert the number of seconds of silence, then click on “Generate”.

How to Export and Save your sound file:

While in Audacity, copy the sound file by right clicking at the end of the sound file and then drag the mouse to the beginning. Release the button. Now the entire sound file is selected (highlighted).

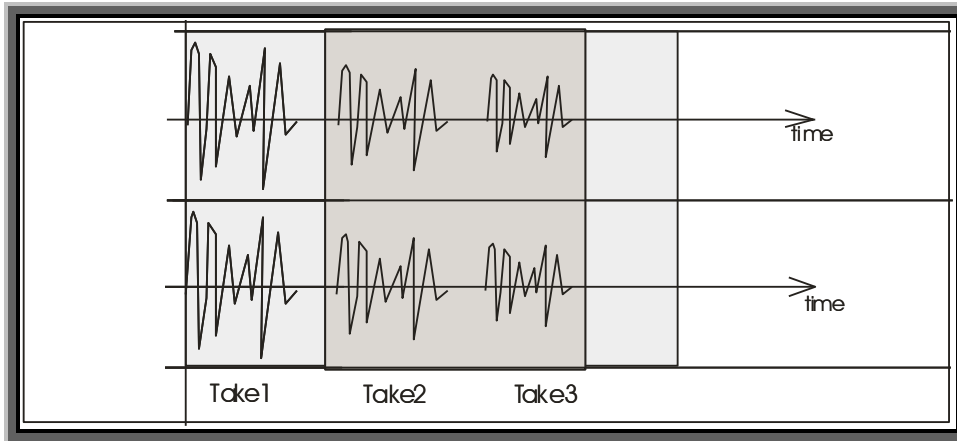


To export as a WAV file: Go to FILE menu, click on EXPORT SELECTION as WAV FILE.

In order to use this sound clip on the DTC or PDTC, it must be converted to a MP3 file. This is done by using the free program called Daniusoft MP3 WAV Converter. If you Google Daniusoft, you will find it or go to www.daniusoft.com

Selecting the desired track from several takes:

- d) Remove the unwanted sound tracks:



- select the sound clips to eliminate (i.e.: Take 2 and Take 3).
- Cut using EDIT menu, then CUT.

Section 18

How to apply labels to pushbuttons

How to apply labels:

Tools needed: pointed tweezers

Note: There is at least one empty label supplied in your label kit. It can be used as a practice label if desired.

- 1-Hold label with left fingers on the left side of label, writing facing you.
- 2-Use tweezers to partially separate the backing paper.
- 3-Prevent the backing from adhering to the label by bending the backing slightly.
- 4-Use the tweezers to hold the front part of the label. The tweezers will touch the sticky surface – this is OK (just keep your fingers from touching the sticky surface).
- 5-Completely remove the backing with your left fingers.
- 6-Align the label above the pushbutton. When satisfied, apply the label to the pushbutton and rub your finger over the label to remove any air bubbles.

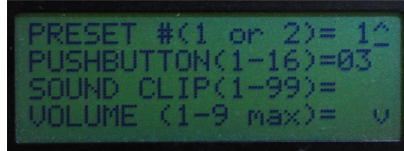
Note: If you have to remove the label it will, unfortunately, be destroyed.

Section 19

Troubleshooting

No sound is heard when a console pushbutton is pressed.

- 1) Are you in the “Main Menu” screen?



If not in the Main Menu then the console pushbuttons do not operate.

Change screens using the ‘^’ up or ‘v’ down arrows.

- 2) Is a sound file assigned to that pushbutton?
 - i. See Section 9, sub-section #2.
- 3) Is the volume level control too low?
 - i. See photo #4.
- 4) Is the volume level of the sound file too low?
 - i. See Section 9, sub-section #2.
- 5) Is the main circuit board receiving power?
 - i. Check the two power leds to the left of the large black heatsink. The should be lighted. If not then check the power plug on the main circuit board. Is it loose, unsoldered, not there?
- 6) Does the MP3 player board (the red board on top of the main printed circuit board) have power?
 - i. The “Power” led should be lit.
 - ii. If the “Power” led is not lit then check that the power connector is fully pushed into the power jack at the bottom left of the MP3 player board. (Always support the jack when you insert the plug – the hardware on this board is delicate).
 - iii. There is a power select mini-mini slide switch to the right of the power jack on the MP3 player board. It should be in the “EXT” (external power source) position. It may have been moved into the “USB” position in error. If so then the MP3 player will receive no power.

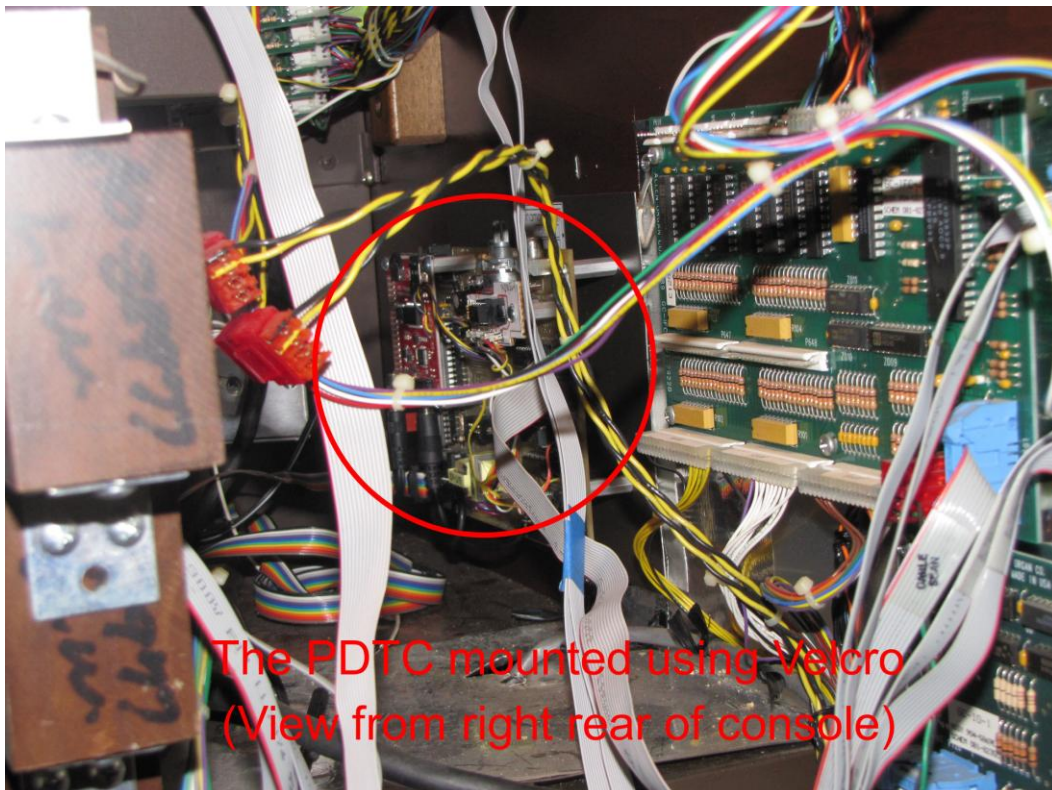
Also, if it is in the “EXT” position and the board still does not have power then try sliding the switch to “USB” position and then back to “EXT”. Then re-apply power to the unit.
- 7) Is the Mini SD card plugged into the MP3 player board?
 - i. Release the mini SD card and reinsert it. Again, this is a delicate mechanism. Use care.
- 8) Are there MP3 sound files on the mini SD card?
 - i. Test this by switching off the power, wait 10 seconds then apply power. Watch for the green “STATUS” light on the red MP3 player board. It should blink 3 times after a few seconds (it may look like two times because they are fast blinks). If the

- led blinks several times (3 times-difficult to count, it looks like two) then the MP3 files on the mini SD card are present.
- ii. Check the audio output jack. Make sure the plug is fully inserted. (Always support the jack on the circuit board when you insert the plug – the hardware on this board is delicate).
 - iii. If the led blinks continuously then there is a hardware problem with the MP3 player board.
 - iv. If the led blinks one long blink, then there are no formatted MP3 files present on the mini SD card.
Check the mini SD card by using your computer to observe the files. (One customer took all the files and put them into a folder on the mini SD card. The MP3 player can not open a file folder).
 - v. If the led blinks one long blink followed by one short blink then media has been found but there are no MP3 files on the media. See iv above.
- 9) Check the audio cables from the PDTC main board. Is your amplifier operational?

Section 20

Mounting Photos

The following photos shows how I mounted the PDTC on my Allen MDS 317.



I used the plate mounting assembly. Two strips of Velcro were attached to the rear of the plate (be sure to use alcohol to remove any oil residue on the plate), and then attached two mating strips with the adhesive exposed. I then pushed the plate against the wall of the organ.



The 16 pushbutton strip was mounted using the tabs at either end and #2 Flat Head wood screws. As can be seen, the flat cable runs under the stop board.



Here is the LCD Programming Console mounted to a board and 10" double drawer slides. The "L" blocks are for mounting under the keyboard. Slides can be ordered on Ebay: [2 Pcs 10" 3-fold Full Extension Ball Bearing Drawer Slides, Free Shipping, New](#), \$10.29. [xa-electronics](#)



When the drawer is pulled out, the LCD Programming Console can be lifted to give access to the list of sound clips.



Here is the LCD Control Panel mounted under the organ keyboard.



The Allen MDS317 Theater Organ with all my additions: 1) Programmable Toy Counter, 2) 39-Stop Classic Organ addition –Content Expander 440, 3) LED Music Rack and Stop Tablet lighting, 4) Addition of 8 Toy Counter toe studs, 5) Addition of 8 Toy Counter left cheek push buttons, 6) Headphone Mixer/Amplifier (not seen) with pilot led, 7) Addition of pilot LED to indicate when the amplifiers are active (above power switch).